

IN THE CLAIMS:

1. (Currently Amended) A pulse magnetron which is pulsed for oscillation, comprising:

an anode having a number of vanes mounted radially on an inner wall of a cylindrical anode shell thereof;

a cathode provided at a center of the anode to face an inner end of each vane; and

a pair of pole pieces provided for applying a magnetic field substantially in parallel to the cathode across an interaction space defined between an outer side of the cathode and the inner ends of the vanes;

wherein a radius r_a of an inscribed circle defined by the inner ends of the vanes and a radius r_c of the cathode surface are determined by an equation

$$V_a = 942 (r_a^2 - r_c^2) (10^4 b - 10650 / n\lambda) / n\lambda,$$

wherein V_a is a pulsed anode voltage in volts, said r_a and said r_c are in cm, b is a minimum magnetic flux density in Tesla along an axial direction of the interaction space, said axial direction being parallel to said inner wall, n is given by: (a number of divisions (the number of the vanes))/2, and λ is an oscillation wavelength in cm;

wherein using of said equation is modified such that said radius r_a and said radius r_c ~~are applied at~~ identify a point where magnetic flux density is maximum along said axial direction of the interaction space;

wherein the anode and the cathode are arranged to satisfy ~~at least~~ either (i) increasing the radius of the inscribed circle defined by the inner ends of the vanes to a radius r_a' or (ii) decreasing the radius of the cathode

surface to a radius r_c' at a point where the magnetic flux density for both cases (i) and (ii) is minimum along said axial direction of the interaction space for points corresponding to radiuses r_a' or r_c' .

2. (Currently Amended) A pulse magnetron of claim 1, wherein a distance between the outer surface of the cathode and the inner ends of the vanes towards a center along the axial direction of said interaction space is increased.